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ABSTRACT

This report of a conference convened by the Federal Library and Information Center Committee (FLICC) Subcommittee on Education provides brief summaries of four panel discussions conducted by 15 federal librarians who had assembled automation systems for their agencies' libraries and information centers. The first panel, consisting of Dean Hough, Ann Roane Clary, Ellen Johnson, and Patti Fields, described decision-making alternatives during the automated library system selection process, including useful sources of information for selecting a system, constraints on choices such as economic and political limitations, and selection-making criteria and procedures. Rosalie Sherwin, Jane Perry, John Celli, and Dean Hough participated in a second panel that described retrospective conversion alternatives using house staff, contractors, and Library of Congress Select MARC (machine-readable cataloging), and discussed problems centered around scheduling, deadlines, quality assurance, and monitoring payments. A third panel, consisting of Stephen Toney, Susan Wagner, Sarah Mikel, Mary Bonnett, and Richard Shrout, described minicomputer-based automated library systems at several federal libraries, including hardware and software requirements, installation procedures, writing specifications, and problems regarding authority control, telecommunication, and revisions. Finally, Elwynda Chapman, Rosemary Coskey, Jill Drucker, and Ann Roane Clary discussed topics related to the use of microcomputer systems for automating library tasks, including installation, training, limitations, and telecommunications. An extensive reading list of sources provided by the speakers makes up more than half of the report. (KM)

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**CONFERENCE
ON
MAKING LIBRARY
AUTOMATION CHOICES**

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FLICC Education Subcommittee

Washington 1986

CONFERENCE ON MAKING LIBRARY AUTOMATION CHOICES

Many federal libraries, faced with budgetary constraints and a need to keep up with the burgeoning technology in information science might wish that there were hard and fast government-generated rules to follow in automation.

In the absence of such rulemaking, the best way to learn is from the experiences of librarians who have already made the costly choices and commitments to automation.

In order to allow the federal information community to benefit from such experiences, FLICC/FEDLINK invited 15 library decision-makers who have made difficult automation choices to a conference on May 6, 1986 at the Library of Congress to tell their colleagues about the successes and the pitfalls of their choices.

The program was divided into focus panels entitled: Researching and Evaluating Alternatives, Retrospective Conversion, Minicomputer Systems, and Microcomputer Systems.

Bruce Miller, FLICC/FEDLINK network librarian, perceiving the need for such a meeting, organized and coordinated the conference.

Hollis Landrum, a former newspaperman and now librarian with the Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi, served as conference reporter. His Summary of Proceedings follows.

Conference speakers provided FLICC/FEDLINK with Reading Lists--compilations of books and periodicals they researched when arriving at their automation choices. These lists are provided at the end of the Summary.

FLICC/FEDLINK Conference on Making Library Automation Choices

by
Hollis Landrum

Fifteen information pioneers, who put together automation systems for their agencies' libraries and information centers during the early stages of the technological revolution, spoke at a FLICC/FEDLINK automation conference held at the Library of Congress on May 6, 1986.

The federal librarians, who sat on four subject panels, swapped experiences, insights, and advice for their colleagues about to embark on automation projects.

The panels focused on: (1) methods of selecting library automation systems, (2) retrospective conversion techniques, (3) minicomputer, and (4) microcomputer-based automated library systems. A brief question and answer period followed each panel discussion. About 150 members of the information community attended.

First Panel

Four speakers described decision-making alternatives during the automated library system selection process. The panel cited useful sources of information for selecting a system, discussed constraints on choices such as economic and political limitations, and reviewed the criteria and procedures they used for making a selection.

Dean Hough, USAREUR and Seventh Army Library System, kicked off the session by describing how they chose the GEAC system. He stressed the importance of learning the procurement rules of one's organization. "You work more from constraints than choices," he said, "so you must say at the beginning, 'What are the most important things?' Ask what you can not give up."

He advised those selecting a system to make certain that all specifications are in line well before the proposal. The evaluation of a proposal is just the culmination of the process, he stated.

Hough said that his library formed a technical review board and selected two outside consultants to serve on the board to help eliminate blind spots of local technical review board members and to bring additional expertise after bids were returned. He suggested that libraries should consider adding weighted elements to a proposal which would provide evaluation options other than the contract going to the lowest bidder.

Ann Roane Clary, Chief Librarian, Research Library, Board of Governors of the Federal Reserve System, followed by outlining the evaluation procedures used to select the INNOVACQ system for their research library. She recommended reading widely, especially the latest journal articles, and studying vendors' literature. She also pointed out that conferences and meetings are valuable sources of information on automated systems.

A working committee was formed to select a system from a field narrowed to seven candidates. A nine-page checklist was developed as a useful working tool, and an appointed project

manager coordinated efforts during the selection and implementation phases. Over the latter period, the manager kept a log of information about the INNOVACQ system, noting problems and their resolution.

Clary suggested that, as applicable, libraries evaluate all costs, including those for training, travel, hardware, software, site preparation, shipping, and telecommunications. She also advised considering lease versus purchase plans and projecting annual costs for these over a five year period.

Ellen Johnson, Federal Reserve Bank of Kansas City, stressed the importance of involving staff members when evaluating automated systems. "The system, the staff, and the management are critical ingredients in an effective automated system," she explained.

Their library analyzed the available alternatives to find a system to fit their needs. A programmer analyst was assigned to interview and observe staff so as to identify requirements and determine an acceptable method of automating daily operations. The library staff also prepared reports and participated in the review. After considering all constraints, including budget and existing equipment, an integrated system approach was chosen that would link personal computers (PCs) with an available IBM 3084 mainframe. PCs would be used where possible and mainframe applications would be developed for those functions for which prewritten software was not available.

Johnson said the library decided to phase in the system over a period of time concurrent with the installation of separate modules. Two forms were developed, one to compare microcomputer software and another to compare software for mainframe applications. She also suggested that consideration should be given to security and higher level management information requirements when selecting a system. The process of selecting and developing a system takes a while, she noted, but look at the time spent as an investment.

Patti Fields, Associate Librarian, National Center for State Courts, concluded the first panel by commenting on similarities in scenarios presented by earlier panelists. "Even cited sources are similar," she noted.

Her situation, she said, was somewhat different, since as a librarian, she had joined a team of systems professionals asked to study automation alternatives for a state supreme court law library. The project began in June 1985, when the center dispatched a team of consultants to survey the library's present manual system. The resulting operations review contained documents prepared by library staff over a two-year period as well as analyses of growth rates, file sizes, and serials transactions. Together with the library staff, the team completed a ninety-page requirements document for use in assessing alternative approaches to an integrated library system. One high priority requirement was storage of serials holdings data in standardized format -- the evolving USMARC Format for Holdings and Locations.

Constraints on selection, she said, involved costs, compatibility with an existing court information system, and hardware already dedicated to the library. Spreadsheets furnished by FEDLINK were helpful in making cost comparisons.

Fields advised librarians beginning automation projects to obtain a dictionary of computer terms, to read current evaluative systems literature, such as updates to the Datapro70 series, and to collect vendor literature vigorously, but to be alert to phrasing variants such as MARC record, MARC-like record, and full MARC record, or compatible versus 100 percent compatible.

Tours of actual installations of candidate systems, she said, are essential, not only to assess vendor/supplier relationships and system performance, but also to discover what libraries are doing to adapt vendor systems to local needs (and vice-versa). A version demonstrated by a library, however,

may not match the current version offered by the vendor, so it is important to ask, "When I put the key in today, what do I drive off with?"

Second Panel

The second panel was tasked with describing retrospective conversion alternatives. The three alternatives represented by the panel were conversions using in house staff, contractors, and Library of Congress Select MARC. Some of the problems discussed centered around scheduling, working under a deadline, quality assurance, and monitoring payments.

Rosalie Sherwin, Supreme Court, described the use of in-house staff for retrospective conversion at that library. She said the situation there made it possible to use in-house staff because there was no time deadline involved, only a limited number of records needed to be converted, an experienced staff was available to work during non-prime time on OCLC, and the sample hit rate was very high.

She suggested that one of the principal considerations should be to put in writing complete guidelines for the in-house staff to use for the conversion process. She also advised consolidating records in advance as much as possible to avoid deduping.

Jane Perry, Geological Survey Library, said that they first began to explore the possibilities of retrospective cataloging in late 1982, primarily in anticipation of the acquisition of a turnkey on-line integrated library system. In 1983, the library began installation of the Avatar ILS system which made the retrospective conversion of catalog cards to machine-readable records a priority item.

Geological Survey Library's retrospective conversion process was accomplished using contract personnel. A management study performed at the library indicated that the conversion could not be done by in-house staff. Therefore, high use items were targeted for conversion in phases by an outside contractor. Phase one was made up of current serial titles held by the library; phase two covered analytics for thirty selected USGS-published serial publications; and phase three covered analytics for selected serial publications published by various state geological surveys.

Perry said that "the most feasible alternative" was to ride an existing FEDLINK contract and to select a vendor who had already performed retrospective conversion under the terms of that contract. After initial discussions with FEDLINK staff, two vendors were selected to perform a preliminary test for using a sample of one hundred serial records. Quantity and quality were established in advance and a list of expectations was drawn up and presented to each potential vendor. This list included statements regarding deadlines, standards, on-site and off-site operation, types of records to be converted, and quality control. Following the tests, Informatics General Corporation (IGC) was selected to handle the project.

According to Perry, the greatest difficulty they experienced was working under a deadline with the vendor. The Chief Cataloger was designated as project manager and the Assistant Chief Cataloger was assigned to work as a liaison with IGC staff. Everything was done off-site, and each record was proofed by library staff before it was loaded into the data base.

John Celli, Library of Congress Catalog Distribution Service, offered a third retrospective conversion alternative using LC's Select MARC Retrospective Conversion Service. He commented that this approach may not fit every library's need, but it is inexpensive and provides a basic, no frills service with high quality MARC records.

Using Select MARC, a library's holdings are matched against some 3.5 million records using LCCNs, ISBNs, or ISSNs for a retrieval hook. A tape containing full MARC records is provided.

The service also provides a tape of non-matches which can be used to search against data bases of other vendors.

Celli said the hit rate is best for 1968 records and later. Costs are determined by the type of input medium used. Nine-track tape is the cheapest (i.e., one cent per record), and a photocopied shelflist is the most expensive (i.e. eight cents per record).

Dean Hough, who has been using Select MARC to covert holdings at the USAREUR and Seventh Army Library System, commented on the service. He said that the most permanent part of an automated system is the data base. Hardware and software will change over the years, but the data base should be a permanent structure. The use of the MARC format becomes very important to insure compatibility. The only problems the library encountered, according to Hough, were local ones caused by converting their media to a tape format.

Panel Three

The third panel described minicomputer-based automated library systems at several federal libraries. It covered such areas as hardware and software requirements, installation procedures, writing specifications, and special problems encountered regarding authority control, telecommunication, and revisions.

Stephen Toney, Smithsonian Institution, described the GEAC system at that library and the procedures used to select it. He advised involving a wide range of staff in the selection process.

A series of committees at the library were asked to define requirements. It took six months to define functions and determine what information had to be known to perform each function. Another three months were spent consolidating that data into a requirements statement. An independent group gathered articles and materials on available systems.

The federal procurement system, Toney said, is helpful in forcing systematic evaluation and finding the best available option. It also requires that you list in detail how you are going to evaluate the system.

He suggested that libraries evaluating systems should have the vendors demonstrate the features of their systems. He also advised linking payments to acceptance testing such as response time and reliability tests.

Susan Wagner, of the Naval Academy Library at Annapolis, described the GEAC system in use there and stressed the importance of being prepared for implementation problems. "Implementation is the most important part," she said, "and the part where you better be prepared to change your plans."

The academy library, she explained, had to overlay the data base because of initial load problems and she advised looking carefully at authority control handling on any prospective system. She also suggested that consideration be given to locating the computer hardware somewhere other than inside the library, such as in the data processing center, because of the amount of staff time required to maintain it, and that training on the system be delegated below supervisory level if possible.

Sarah Mikel, Army Corps of Engineers Library, described procedures for implementing the LS2000 system in the Army Corps of Engineers library system. Field librarians were asked to help profile formats for use on the system, she said, and local formats based on MARC were developed.

Software was provided to the field to search and test the system and nearly a year was spent profiling with the different sites. "This took a lot of telephoning and coordinating," she commented.

Problems were experienced with the copy information in the 049 field and deduping was extensive, but the biggest problem, she said, was "we bought too small." Because of the number of remote sites involved, each with a separate holding location capability, the amount of storage capacity needed was larger than anticipated. This was solved by purchasing additional tape drives.

Mikel said the Corps had set up a one-year study period to determine policy and usage on the system. Five field libraries located primarily in the southeast were selected for the study because of existing telecommunication lines. She stated that the Corps project had received excellent hardware support on LS2000 and that OCLC had done a good job moving private file tapes on DIALOG to the LS2000 system.

Mary Bonnett, chair of the Integrated Library System (ILS) Users Society, described the ILS system. She said ILS is a minicomputer-based library system designed to support all library activities by utilizing one master bibliographic file comprised of catalog records in MARC format and associated activity records.

ILS was developed by the National Library of Medicine. Developmental funds, personnel, and a test site were provided by the Pentagon Library. The software is owned by the United States Government and is available through the National Technical Information Service (NTIS). The software is written in MIIS/MUMPS and supported by the Meditech Interpretive Information System (MIIS) operating system. It runs on the Data General Eclipse series, DEC PDP/11 series, and IBM series 1 computers.

Although there is currently no vendor installing the public domain ILS, according to Bonnett, this is anticipated to change when all the modules on the system are completed. There is also some interest indicated to translate ILS into a UNIX based system which will offer greater support, and this should make it more interesting to Department of Defense (DOD) libraries.

Richard Shrout, Justice Department, concluded the third panel by commenting on the choice of the DATALIB system at that library. "We obtained DATALIB in 1979," he said, "primarily because of its emphasis on the acquisitions. We have recently implemented the on-line catalog module and will implement the serials management module when it is debugged and fully operational."

The DATALIB on-line catalog module has two levels, one menu driven and one driven by commands. The patrons and most librarians use the menu driven level. Shrout described what he believes to be a unique capability of the DATALIB on-line catalog module, the ability to allow the patron to search CATALOG, a combination of all author, title, and subject fields. He stressed that the most powerful systems can be the most difficult to implement because of the broad number of choices available.

He said that the DOJ Library has contracted out the maintenance and operation of the minicomputer hardware and software. This contract allows them to house and maintain the system at another site, relieving them of the staff time that would otherwise be involved.

Shrout urged librarians considering automating their libraries to get involved with user groups, or if one was not available, to start one. User groups are essential to system support, he said, and by sharing lessons learned they provide valuable information and feedback to all users.

He concluded by advising those present that implementing a system was only the beginning, not the end, of an ongoing process. All systems continually change as new versions are released. The new software can include fixes, enhancements, and totally unexpected changes.

Fourth Panel

The final panel dealt with the use of microcomputer systems for automating library tasks. Topics covered included installation, training, limitations, and telecommunication.

Elwynda Chapman, Census Bureau Library, began by describing the multi user version of SC350 their library was testing for OCLC. "Because we needed multi-user capability for a remote site," Chapman said, "we were selected to be a test site for the multi-user version."

The SC350 multi-user version is based on a local area network (LAN) supported by a Tseng board mounted inside an M300, she explained. Since response time decreases as one progresses further down the network, Chapman said OCLC may decide to use the IBM PC-AT to speed up the response time.

The SC350 Enhancement increases the memory from 256K to 640K. The increased memory allows a library to run programs such as FRAMEWORK which require more memory.

Rosemary Coskey, Naval Medical Research Institute, outlined the reasons behind their library's choice of a DATA TREK system.

She described the institute library as a small, special library with a staff of three, one professional librarian and two library technicians. The library serves an institute staff of about 400. The library's circulating collection consists of less than 10,000 books.

In 1982, shortly after she assumed her current position, she was asked to survey the market for software applicable to a small library and to come up with a cost estimate for automating the library. She worked with a programmer and a systems analyst.

"I wanted to make sure there wasn't already some product on the market which would be suitable for our needs. There wasn't much for a library as small as ours," she discovered. "Most products were being developed for large libraries with large budgets. Most required mainframes or minicomputers. We wanted a microcomputer-based system; ideally, a turnkey system where the vendor would supply hardware, software, installation, training, and maintenance."

Initially, she read a highly favorable article in the March 1983 issue of Online about the recent installation of the Card DATALOG system available from a company called DTI DATA TREK. Coskey's interest was kindled by the description of this user-friendly, menu-driven, expandable, modular system designed for small libraries.

Coskey requested complete information from DTI, and attended a conference where several systems were demonstrated, including DATA TREK. She then surveyed prior DATA TREK users around the country to determine satisfaction with the system. Most reports were highly favorable.

When the price for the system--hardware and software--turned out to be in the \$30,000 range, mirroring the earlier cost estimates arrived at by the automation team, "We started to consider it very seriously," she said. In March of 1985, the system was delivered and installed by a DATA TREK representative who flew in from California for two days to accomplish the task.

Coskey advised making certain that the company behind the system being evaluated is reliable and that it has a good track record and will be around for some time.

Jill Drucker, Internal Revenue Service, described the procedures used to select the INNOVACQ system at that library. Cover all the bases, she advised. "If you feel like you have made all the calls necessary," she advised, "make one more."

Separate folders of material were kept on each system being considered by that library. She suggested having the prospective vendor come into the library and recommend in writing what capacity is needed. Back up every phone call in writing, so there is no confusion later, she suggested, and rearrange furniture to visualize needs once automated.

Ann Clary, of the Federal Reserve System, and the final speaker at the day-long meeting, offered additional comments regarding the INNOVACQ system. With multiple central processing units, the lines blur between this one and a minicomputer system, she said.

She stressed the importance of assuring that you are dealing with a reliable company; that you notify your users of necessary delays in service during the installation and training periods, and the usefulness of a quality control group which will monitor the accuracy and format consistency of all entered records. Above all, she advised, library management should attempt to make automation a positive experience for the staff.

READING LISTS

Most of the speakers at the May 6, 1986 FLICC/FEDLINK Conference on Making Automation Choices indicated that books and periodicals about the new technologies were an important information resource in searching for a library automation system.

In response to a request from FLICC/FEDLINK, the following reading lists were provided by conference speakers. The annotated lists appear under the speaker's name.

Ann Clary

- Boss, Richard W. *The Library Manager's Guide to Automation*. 2nd ed. White Plains, N.Y. :Knowledge Industry Publications, 1984. (Professional Librarian Series)
- Corbin, John. *Developing Computer-Based Library Systems*. Phoenix, AZ: Oryx Press, 1981. (A Neal-Shulman Professional Book)
- McQueen, Judy and Boss, Richard W. "Sources of Machine-Readable Cataloging and Retrospective Conversion." *Library Technology Reports*, v.21, no. 6, (November-December, 1985). (Published by the American Library Association)
- Matthews, Joseph R. "Growth and Consolidation: The 1985 Automation Library System Marketplace." *Library Journal*, v.111, no. 6 (April 1, 1986):25-37. (Annual article)
- Questions You Should Ask When Selecting a Library Automation System*. West Newton, MA: CLSI, n.d.

Rosemary B. Coskey

- Boss, Richard W. *The Library Manager's Guide to Automation*. White Plains, NY : Knowledge Industry Publications, 1979.
- Ertel, Monica. "Apples in the Apple Library--How One Library Took a Byte." *ONLINE* (March 1983):7:20-29.
- Ertel, Monica. "A Small Revolution: Microcomputers in Libraries." *SPECIAL LIBRARIES* (April 1984):75:95-101.

Patti P. Fields

Integrated Library System Planning For A State Court Law Library

- "All About Optical Readers." *Datapro 70. Volume 2: Peripherals*. 70D9-001RE (January 1986):101-131.

- "All About Magnetic Tape and Disk Pack Maintenance." *Datapro 70. Volume 2: Peripherals*. 70D9-001RE (March 1984):45a-45m.
- "Alphanumeric Display Terminals." *Datapro 70. Volume 2: Display Terminals*. 70D9-001BA (May 1986):101-147.
- Association of Research Libraries. Systems and Procedures Exchange Center. *Integrated Library Information Systems in ARL Libraries*. Washington, D.C. : Association of Research Libraries, Office of Management Studies, 1983.
- "Automated Record Tracking Systems." *The Records & Retrieval Report 1* (January 1985):1-17.
- Boss, Richard W. *The Library Manager's Guide to Automation*. 2nd ed. White Plains, NY : Knowledge Industry Publications, 1984.
- Boss, Richard W. "The Ideal Acquisitions System." *Issues in Library Management*. White Plains, NY : Knowledge Industry Publications, 1984.
- Boss, Richard W. "Issues in Automating Acquisitions." *Issues in Library Management*. White Plains, NY : Knowledge Industry Publications, 1984.
- Boss, Richard W., and Judy McQueen. "Serials Control in Libraries : Automated Options." *Library Technology Reports*, 20 (March/April 1984):83-282.
- Broering, Naomi C. "The Georgetown University Library Information System (LIS) : A Minicomputer-based Integrated Library System." *Bulletin of the Medical Library Association*. 71 (July 3, 1983):317-23.
- Bryant, Bonita. "Automating Acquisitions : The Planning Process." *Library Resources & Technical Services* 28 (October 1984):285-98.
- Burger, Robert Harold. "Artificial Intelligence and Authority Control." *Library Resources & Technical Services* 28 (October 1984):337-45.
- "A Buyer's Guide to Software Acquisition." *Datapro 70. Volume 3. Software Concepts and Trends*. SW10-000AE (April 1986):101-113.
- Clack, Doris Hargrett. "Authority Control : Issues and Answers." *Technical Services Quarterly* 3 (1/2, Fall/Winter 1985-1986):127-140.
- Corbin, John. *Developing Computer-Based Library Systems*. Phoenix, AZ : Oryx Press, 1981.
- Corbin, John. *Managing the Library Automation Project*. Phoenix, AZ : Oryx Press, 1985.
- Downing, Douglas and Michael Covington. *Dictionary of Computer Terms*. Woodbury, NY : Barron's Educational Series, Inc., 1986.
- Epstein, Susan Baerg. "Automated Authority Control : A Hidden Timebomb?" *Library Journal* 110 (November 1, 1985):36-7, (January 1986):55-6.
- Epstein, Susan Baerg. "Automation Takes Longer Than You Planned." *Library Journal* 111 (May 15, 1986):48-49.

- Fayen, Emily Gallup. "The Online Public Access Catalog in 1984 : Evaluating Needs and Choices." *Library Technology Reports* 20 (January/February 1984):7-59.
- Feng, Cyril C.H., Gary Freiburger, and Patricia C. Knudsen. "Implementation of the Integrated Library System : University of Maryland Health Sciences Library." *Bulletin of the Medical Library Association* 71 (July 3, 1983):312-16.
- Furlong, Elizabeth J. "A Case Study in Automated Acquisitions : Northwestern University Library." *Journal of Library Automation* 13 (December 4, 1980):222-240.
- Goldstein, Charles M., Elizabeth A. Payne, and Richard S. Dick. *The Integrated Library System (ILS) : System Overview*. Bethesda, MD : Lister Hill National Center for Biomedical Communications, 1981.
- Graham, Peter S. "Technology and the Online Catalog." *Library Resources & Technical Services* 27 (January/March 1983):18-35.
- Grossman, George S. "The Totally On-line Library : Northwestern's Integrated Library System." *Law Library Journal* 77 (No. 1, 1984-1985):47-57.
- Hildreth, Charles R. *Online Public Access Catalogs : The User Interface*. Dublin, OH: OCLC, 1982.
- Kauffman, S. Blair. "Planning for Automation : Microcomputers in the Law Library." *Law Library Journal* 77 (No. 1, 1984-1985):6-25.
- Kazlauskas, Edward John. "Information Management Software : Categories and Criteria for Review." *Library Software Review* 3 (March 1, 1984):46-51.
- Koenig, M.E.D. "Special Tutorial. Data Relationships : Bibliographic Information Retrieval Systems and Database Management Systems." *Information Technology and Libraries* 4 (September 3, 1985):247-272.
- LS/2000 Planning Considerations*. Dublin, OH : OCLC, 1985.
- Library of Congress. Processing Services. *Authorities : A MARC Format*. 1st ed. Washington, DC : Cataloging Distribution Center, Library of Congress, 1981
- Library of Congress. Processing Services. *MARC Conversion Manual -- Authorities (Series) : Content Designation Conventions and Online Procedures*. 2nd ed. Washington, DC : Cataloging Distribution Center, Library of Congress, 1985.
- McQueen, Judy, Richard W. Boss. "Serials Control in Libraries : An Update of Automation Options." *Library Technology Reports* 21 (May/June 1985):231-343.
- Markey, Karen. *Subject Searching in Library Catalogs : Before and After the Introduction of Online Catalogs*. Dublin, Ohio : OCLC Online Computer Library Center, 1984.
- Marx, Patricia C., and John N. Marx. "Automating the Production of Bindery Slips." *Technicalities* 5 (March 3, 1985):15-16.
- Matthews, Joseph R. *Choosing an Automated Library System : A Planning Guide*. Chicago : American Library Association, 1980.

- Matthews, Joseph R. *Directory of Automated Library Systems*. New York : Neal-Schulman Publishers, 1985.
- Matthews, Joseph R. *Public Access to Online Catalogs : A Planning Guide for Managers*. Weston, Conn. : Online, Inc., 1982.
- Matthews, Joseph R., Gary S. Lawrence, and Douglas K. Ferguson. *Using Online Catalogs : A Nationwide Survey*. New York : Neal Schuman Publishers, 1983.
- Miller, Bruce Cummings. "OCLC-MARC Tape Processing : A Functional Analysis." *Library Software Review* 3 (June 2, 1984):164-174.
- Miller, Dick R. and Karen Brewer. "Usefulness of OCLC Archive Tapes As A Basis for Local Online Systems." *Cataloging and Classification Quarterly* 2 (3/4 1982):77-82.
- OCLC-MARC Tape Format*. Dublin, OH : OCLC Online Computer Center, Inc., 1984.
- Papers presented at the RTSD/CCS Subject Analysis Committee Program entitled "Subject Access in the Online Catalog" *Library Resources & Technical Services* 29 (January 1,/March 1985):1-51.
- Powell, James R., and June E. Slach. "How to Evaluate Integrated Library Automation Systems." *Online* 9 (March 1985):30-6.
- Questions You Should Ask When Selecting a Library Automation System*. West Newton, MA. : CLSI, 1986.
- Regenstreif, Herbert. "Automated Serials Management Systems in Law Libraries : The Acquisitions Component." *The Serials Librarian* 9 (Winter 1984):133-41.
- "Request for Proposal Procedures." *Datapro EDP Solutions. Volume 2: Selection and Acquisition* E80-100 (December 1981):101-106.
- Rice, James. *Introduction to Library Automation*. Littleton, CO : Libraries Unlimited, 1985.
- Richards, Timothy F. "The Online Catalog : Issues in Planning and Development." *Journal of Academic Librarianship* 10 (March 1984):4-9.
- Salmon, Stephen R. "Characteristics of Online Public Catalogs." *Library Resources and Technical Services* 27 (January 1,/March 1983):36-67.
- Schriefer, Kent. "Serials Control at Boalt Hall." *Law Library Journal* 77 (No. 1, 1984-1985):58-75.
- Senzig, Donna. "Library Catalogs for Library Users." *RQ* 24 (Fall 1, 1984):37-42.
- Tolle, John E. *Public Access Terminals : Determining Quantity Requirements*. Dublin, OH : OCLC, 1984.
- US-MARC Format for Holdings and Locations*. Washington, DC : Cataloging Distribution Center, Library of Congress, 1984.
- Uluakar, Tamer, Anton R. Pierce and Vinod Chachra. "Design Principles for a Comprehensive Library System." *Journal of Library Automation* 14(June 1981):78-89.

Woods, Richard. "The Compatibility of Library Systems." *Journal of Library Automation* 13 (December 4, 1980:244-250.

Wynne, Joseph. "LAMBDA at the University of Virginia Law Library." *Law Library Journal* 77 (No. 1, 1984-1985):76-86.

Periodicals

Cataloging and Classification Quarterly
Datapro 70
Datapro EDP Solutions
Information Technology and Libraries
Journal of Library Automation
Law Library Journal
Library Hi Tech News
Library Journal
Library Resources and Technical Services
Library Software Review
Library Systems Newsletter
Library Technology Reports Online
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Serials Librarian
Technical Services Quarterly
Technicalities

Dean Hough

Periodicals

Library Systems Newsletter. Excellent periodical for those planning, developing, and operating automated library systems.

Library Technology Reports. Periodic descriptions of automated system modules such as Online Public Access Catalog and Serials as offered by different vendors. November-December 1985. Entire issue is on "Sources of Machine-Readable Cataloging and Retrospective Conversion."

Ellen Johnson

Books

Cohen, Elaine and Aaron Cohen. *Automation Space Management and Productivity: A Guide For Libraries*. New York : Bowker, 1982.

Corbin, John. *Developing Computer-Based Library Systems*. Phoenix, AZ: Oryx Press, 1981.

The Essential Guide to the Library IBM PC. Westport, CT. : Meckler Publishing, 1985.

The Library Micro Consumer: MRC's Guide to Library Software. Robert M. Mason and Stephen C. Ennis, editors. Atlanta, GA : Metrics Research Corporation, c1986.

Micro Software Evaluations. Jeanne M. Nolan, ed. Torrence, CA : Nolan Information Management Services, c1984.

Walton, Robert A. *Microcomputers: A Planning and Implementation Guide For Librarians and Information Professionals.* Phoenix, AZ : Oryx Press, c1983.

Woods, Lawrence A. and Nolan F. Pope. *The Librarian's Guide to Microcomputer Technology and Applications.* White Plains, NY : Pub. for American Society for Information Science by Knowledge Industry Publications, Inc., c1983.

Periodicals

Data Base

Infoworld

Library Hi-Tech Journal

Library Hi-Tech News

Library Journal

Library Technology Reports (March-April 1984 very helpful)

MIS Week

Micro Software Report, v.III - 1984-1985

OCLC Micro

Online

Show-Me Libraries

Small Computers in Libraries

Special Libraries

Specialist

Rosalie Sherwin

Bullard, Scott R. "How is Technology Affecting the Acquisitions Process? An Update; Highlights of the RTSD RS Acquisition of Library Materials Discussion Group." *Library Acquisitions* 9 (No. 3, 1985):265-6.

Burger, Robert Harold. "Artificial Intelligence and Authority Control." *Library Resources & Technical Services* 28 (October 1984):337-45.

Butler, Brett, Brian Aveney, and William Scholz. "The Conversion of Manual Catalogs to Collection Data Bases." *Library Technology Reports* (March/April 1978):109.

Carter, Ruth C. *Data Conversion* White Plains, NY : Knowledge Industry Publication.

Caspers, Mary E. "Online Public Access Catalogs: The User." *Festschrift In Honor of Dr. Arnulfo D. Trejo*. Tucson, AZ : University of Arizona, 1984.

Chamberlain, Carol E. "Automating Acquisitions: A Perspective From the Inside." *Library Hi Tech* 3 (No. 3, 1985):57-66.

- Circulation Control*. Powell, OH : James E. Rush Associates, 1983.
- Cochrane, Pauline Atherton, and Linda L. Arret. "Online Library Users--The Library Comes Of Age." *Online* 9 (September 1985):58-70.
- Cochrane, Pauline Atherton. *Redesign of Catalogs and Indexes for Improved Online Subject Access*. Phoenix, AZ : Oryx Press, 1985.
- Collins, Gayle. "From Catalog to Database : Preliminary Steps." *SLJ* 31 (March 1985):123.
- Conference on Integrated Online Library Systems : Proceedings, September 25 and 27, 1983, Columbus, Ohio*. David C. Genaway, ed. Canfield, OH : Genaway & Associates, 1983.
- Conference on Integrated Online Library Systems : Proceedings, September 13 and 14, 1984, Atlanta, Georgia* :. David C. Genaway, ed. Canfield, OH : Genaway & Associates, 1984.
- Corbin, John. *Managing the Library Automation Project*. Phoenix, AZ : Oryx Press, 1985.
- "Cornell Developing Public Access Catalog." *Wilson Library Bulletin* 60, (February 1986):9-10.
- Crawford, Walt, and Lennie Stovel. *Bibliographic Displays in the Online Catalog*. White Plains, NY : Knowledge Industry Publications, 1986.
- Crawford, Walt. *MARC For Library Use: Understanding the USMARC Formats*. White Plains, NY : Knowledge Industry Publications, 1984.
- Crawford, Walt. *Patron Access: Issues For Online Catalogs*. White Plains, NY : Knowledge Industry Publications, 1986.
- Gaida, Harriette H. "The Real Cost of the Online Catalog: Report on a Panel Discussion [at the] TLA University of the South, Sewanee, Tennessee." *Tennessee Librarian* 38, (Winter 1986):24-5.
- Gainey, Lilah L. "Automation (of Acquisitions)." *Texas Library Journal* 61, (Fall 1985):80-1.
- Genaway, David C. *Integrated Online Library Systems: Principles, Planning, and Implementation*. White Plains, NY : Knowledge Industry Publications, 1984.
- "The Generation and Use of Machine-Readable Bibliographic Records." *Library Technology Reports* (November/December 1985):601-613.
- Genier, G., and B. Perry. "Micro-OPAC [Online-Public-Access-Catalogue]: The UTLAS -Brookfield Experiment." *School Libraries in Canada* 5 (Fall 1984):17-18.
- Graham, Peter S. "Technology and the Online Catalog." *Library Resources & Technical Services* 27 (January/March 1983):18-35.
- Grossman, George S. "The Totally On-line Library: Northwestern's Integrated Library System." *Law Library Journal* 77 (No. 1, 1985):47-57.
- Halm, Johan van. "Library Automation: A Review of Integrated Turn-Key Systems." *IATUL Proceedings* 17 (1985):91-6.

- Haverkamp, Dan. "Integrated Library Systems for Small Libraries: Estimating the Cost." *Library Hi Tech* 3 (No. 4, 1985):61-5.
- Henderson, Gay D. "Automated Acquisitions." *Library and Information Technology Association National Conference: Crossroads*. Chicago, IL : American Library Association, 1984.
- Hennepin County Library. Online Public Catalog Task Force. *Hennepin County Library Online Public Access Catalog Task Force Report*. Minnetonka, MN : The Library, 1983.
- Heroux, Marlene Sue. "Automated Serials Cataloging." *The Serials Librarian* 9 (Spring 1985):69-83.
- Hildreth, Charles R. *Online Public Access Catalogs: The User Interface*. Dublin, OH : OCLC, 1982.
- Hirshon, Arnold. "Location of Public Access Catalog Terminals in ARL Libraries." *RTSD Newsletter* 10 (No. 4, 1985):44-6.
- "In Depth--The Online Catalogue of the University of Illinois at Urbana-Champaign." *Information Technology and Libraries* 4 (December 1985):306-51.
- Kaiden, Phyllis. "From Periodicals Budget Cuts to Management Information Systems." *The Serials Librarian* 9 (Winter 1984):83-92.
- Online Catalogs, Online Reference: Converging Trends*. Brian Aveney and Brett Butler, eds. Chicago IL : American Library Association, 1984.
- Online Catalogs: Requirements, Characteristics, and Costs: Report of a Conference Sponsored by the Council on Library Resources at the Aspen Institute, Wye Plantation, Queenstown, Maryland, December 14-16, 1982*. Davis B. McCam, ed. Washington, DC : The Council, 1983.
- "Papers Presented at the RTSD/CCS Program, Subject Access in the Online Catalog, at the 1984 ALA Conference." *Library Resources & Technical Services* 29 (January 1984):5-51.
- Perry, B., and G. Genier. "Micro-OPAC: The UTLAS-Brookfield Experiment." *Argus* 13 (September 1984):105-6.
- Petersen, Karla D. "Planning for Serials Retrospective Conversion." *Serials Review* 10 (Fall 1984):73-8.
- Potter, William Gray. "Online Catalogs." *Library and Information Technology Association National Conference: Crossroads*. Chicago, IL : American Library Association, 1984.
- Powell, James., and June E. Slach. "How to Evaluate Integrated Library Automation Systems." *Online* 9 (March 1985):30-6.
- "Public Access Catalog Survey; Joliet Public Library." *Illinois Libraries* 66 (September 1984):361-4.
- "Queens Borough Public Issues Automation RFP (Request for Proposal)." *Library Journal* 110 (October 1985):35.

- Questions You Should Ask When Selecting a Library Automation System.* West Newton, MA : CLSI, 1986.
- Quinn, Joan M. and Sara C. Heitshu. "Serials Conversion at the University of Michigan." *Drexel Library Quarterly* 21 (Winter 1985):62-76.
- Ra, Marsha H. "The OCLC Acquisitions Subsystem at the City College Library: An Appraisal." *Library Acquisitions* 9 (No. 1 1984):83-92.
- Regenstreif, Herbert. "Automated Serials Management Systems in Law Libraries: The Acquisitions Component." *The Serials Librarian* 9, (Winter 1984):133-41.
- Retrospective Conversion From Cards to Computer.* Anne G. Adler and Elizabeth A. Baber, eds. Ann Arbor, MI : Pierian Press, 1984.
- Reynolds, Dennis. *Library Automation: Issues and Applications.* New York : R.R. Bowker, 1984.
- Rice, James. *Introduction to Library Automation.* Littleton, CO : Libraries Unlimited, 1984.
- Richards, Timothy F. "The Online Catalog: Issues In Planning and Development." *Journal of Academic Librarianship* 10 (March 1984):4-9.
- Rorvig, Mark E. *Microcomputers and Libraries: A Guide to Technology, Products and Applications.* White Plains, NY : Knowledge Industry Publications, 1981.
- Saffady, William. *Introduction to Automation for Librarians.* Chicago : American Library Association, 1983.
- Salmon, Stephen R. "Characteristics of Online Public Catalogs." *Library Resources & Technical Services* 27, (January/March 1983):36-67.
- Sandler, Mark. "Terminal Ailments Need Not Be Fatal: A Speculative Assessment of the Impact of Online Public Access Catalogs in Academic Settings." *RQ* 24 (Summer 1985):460-5.
- Schrade, David, and Dan Houlne. "Serials Automation at 3M--An Unusual Telecommunications Implementation." *Information Technology and Libraries* 3 (December 1984):398-400+.
- Schriefer, Kent. "Serials Control at Boalt Hall." *Law Library Journal* 77 (No. 1, 1985):58-75.
- Seiden, Peggy and Patricia Sullivan. "Designing User Manuals for the Online Public Access Catalog." *Library Hi Tech* 4 (Spring 1980):29-36.
- Senzig, Donna. "Library Catalogs for Library Users." *RQ* 24 (Fall 1984):37-42.
- Serials Control.* Powell, OH : James E. Rush Associates, 1983.
- Silberstein, Stephen M. "Issues In Technology: Interfaced vs. Integrated Systems." *The Journal of Academic Librarianship* 11 (September 1985):224-6.
- Simon, Marjorie B., and Gary Freiburger. "Patron Use of an Online Catalog [University of Maryland]." *Library and Information Technology Association National Conference: Crossroads.* Chicago, IL : American Library Association, 1984.

- Slack, Kenneth Thurston. "The Virginia Tech Library System (VTLS) in Marshall University Libraries." *West Virginia Libraries* 37 (Winter 1984):12-15.
- Smith, Sharon, and Robert Watkins. "Retrospective Conversion of Serials at the University of Houston : Midterm Report." *The Serials Librarian* 9 (September 1985):63-8.
- Stanford University. Libraries. *Socrates: The Online Library Catalog User's Guide*. Stanford, CA : Board of Trustees of the Leland Stanford Junior University, 1983.
- Steinberg, David and Paul Metz. "User Response to and Knowledge About an Online Catalog." *College & Research Libraries* 45 (January 1984):66-70.
- Stoksik, Pamela. "Random Thoughts On On-line Catalogues." *Canadian Library Journal* 42 (April 1985):53.
- Sullivan, Patricia and Peggy Seiden. "Educating Online Catalog Users: The Protocol Assessment of Needs." *Library Hi Tech* 3 (No. 2 1985):11-19.
- Taylor, James B. "The Objective Request-for-Proposal." *Library Hi Tech* 4 (Spring 1986):37-39.
- Tolle, John E. *Current Utilization of Online Catalogs: Transaction Log Analysis*. Dublin, OH : OCLC Online Computer Library Center, Office of Research, 1983.
- Tolle, John E. *Public Access Terminals: Determining Quality Requirements*. Dublin, OH : OCLC, 1984.
- Training Users of Online Public Access Catalogs: Report of a Conference Sponsored by Trinity University and the Council on Library Resources, San Antonio, Texas, January 12-14, 1983*. Marsha Hamilton McClintock, ed. Washington, DC : Council on Library Resources, 1983.
- Turnage, Marthea. "User Education (Online Catlogs)." *Texas Library Journal* 61 (Winter 1985):112-13+.
- Valentine, Phyllis A. and David R. McDonald. "Retrospective Conversion: A Question of Time, Standards, and Purpose." *Information Technology and Libraries* 5 (No. 2, 1986):112-120.
- Vasaturo, Ronald. "A Conversation with Charles Hildreth." *Technicalities* 5 (January 1985):3-6.
- Visk, Linda Sapp. "The USMARC Format for Holdings and Locations." *Drexel Library Quarterly* 21 (Winter 1985):87-100.
- Wang, Chih. "The Online Catalogue, Subject Access and User Reactions: A Review." *Library Review* 34 (Autumn 1985):143-52.
- "What Lies Beyond the Online Catalog?" *Library Hi Tech* 3 (No. 4, 1985):105-14.
- Whitson, Randolph L. "Keyword Access to a Library's Records In An Online Catalog." *Tennessee Librarian* 38 (Winter 1986):28-9.
- Wiederkehr, Robert R. V. *Alternatives For Future Library Catalogs: A Cost Model: Final Report of the Library Catalog Cost Model Project*. Rockville, MD : King Research, 1980.

Wynne, Joseph. "LAMBDA at the University of Virginia Law Library." *Law Library Journal* 77
(No. 1, 1985):76-86.